

Long-Term Results of Revision Rotator Cuff Repair for Failed Cuff Repair: A Minimum 10-Year Follow-Up Study

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INTRODUCTION:

Rotator cuff repair remains associated with high retear rates which range from 13% to 79%. The objective of this study was to evaluate the long-term clinical and structural results after revision rotator cuff repair at a minimum 10-year follow up.

METHODS:

We retrospectively studied the records of all patients who underwent revision rotator cuff repair in 3 different institutions between July 2001 and December 2007 with a minimum 10-year follow up. A total of 54 patients (61% males, mean age 52 ± 6 years old) met the inclusion criteria. Outcome measures included pain (visual analog scale (VAS)), range of motion (ROM), Subjective Shoulder Value (SSV), and the Constant score. Superior migration, osteoarthritis, acromio-humeral interval (AHI) were assessed on standard radiographs. Fatty infiltration and structural integrity of the repaired tendon were evaluated on MRI or CT-arthrogram.

RESULTS:

At a mean 14.1 years (10.4-20.5), range of motion did not progress significantly in elevation and internal rotation between pre- and postoperatively (158° (range, 100° - 180°) to 164° (range, 60° - 180°), $p=0.33$ and L3 (range, sacrum-T12) to T12 (range, buttocks-T7), $p=0.34$ respectively) and decreased in active external rotation from 45° (range, 10° - 80°) to 39° (10° - 80°), $p=0.02$. However, VAS, SSV, and Constant score were all significantly improved at last follow up ($p<0.001$). AHI decreased significantly ($p=0.002$) from 10 mm. (7-14mm) to 8 mm. (0-12mm). Two percent of the supraspinatus/infraspinatus tendons were Sugaya 1, 24% were Sugaya 2, 35% were Sugaya 3, 12% were Sugaya 4, and 27% were Sugaya 5. Goutallier score progressed for all muscles, but this did not reach significance, and mean Goutallier remained <2 for all 4 muscles at last follow up. Hamada score progressed from 0% $>$ Grade 2 preoperatively to 6% $>$ Grade 2 at last follow up.

DISCUSSION AND CONCLUSION:

Revision rotator cuff repair provides significant pain-relief and improvement in functional scores but does not improve active range of motion at long-term follow up. The mild progression of fatty infiltration, AHI, and Hamada score suggests that despite high retear rates (39% of 4 and 5), revision repair could possibly have a protective role on the evolution towards cuff tear arthropathy.